



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/535,112  
Filing Date: May 16, 2005  
Appellant(s): COOPER, JEFFREY ALLEN

\_\_\_\_\_  
Guy H. Eriksen, #41,736  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12/21/09 appealing from the Office action mailed 11/10/09.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:

Claims 5-7 and 9-24 are pending.

Claims 16, 17, and 20-23 are under appeal.

Claims 5-7 and 9-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Krunz et al. ("Impact of video scheduling on bandwidth allocation for multiplexed MPEG streams"; hereinafter Krunz; already of record).

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krunz, in view of Roh et al. ("Starting Time Selection and Scheduling Methods For Minimum Cell Loss Ratio of Superposed VBR MPEG Video Traffic"; hereinafter Roh; already of record).

Claims 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krunz, in view of Kaul et al. (U.S. Pat. 4,002,845; hereinafter Kaul).

It is also noted that the Appellant appeals the status of claims 16, 17, and 20-23 as rejected in the non-final Office Actions of dates 6/12/09, 7/28/09, and the final Office Action 11/10/09. However, an appeal can only appeal the most recent action.

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

**(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

**(8) Evidence Relied Upon**

KRUNZ M et al., Impact of Video Scheduling on Bandwidth Allocation for Multiplexed MPEG Streams, Multimedia Systems, Springer - Verlag, vol.5, no. 6, 1997, pages 347-357.

ROH B-H et al., Starting Time Selection and Scheduling Methods For Minimum Cell Loss Ratio Of Superposed VBR MPEG Video Traffic, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Service Center, Piscataway, NJ, vol. 9, no.6, September 1999, pages 1051-8215.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**Claim Rejections - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action, dated 7/28/09.

3. Claims **5-7 and 9-17** are rejected under 35 U.S.C. 102(b) as being anticipated by Krunz.

With regards to **claims 5-7 and 9-15**, the rejections can be found on the previously presented Office Action of 7-28/09. (For purposes of the appeal, a recitation of the rejections is found below)

Re. **claim 16**, Krunz teaches said fixed number of frame positions is equal to the number of said plurality of channels, such that the integer multiple is equal to one (Krunz: pg. 348, right col., section 2, line 42).

Re. **claim 17**, the claim(s) recites analogous limitations to claim(s) 16 above, and is/are therefore rejected on the same premise.

### **Claim Rejections - 35 USC § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims **18 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Krunz, in view of Roh et al. ("Starting Time Selection and Scheduling Methods For Minimum Cell Loss Ratio of Superposed VBR MPEG Video Traffic"; hereinafter Roh; already of record).

Re. **claim 18**, Krunz teaches staggering the frames, but does not teach that an optimum staggering order of said specified frame type is obtained by maintaining a distance between frames of said specified frame type at a maximum on average, in consideration of the number of said plurality of channels. However, in the same field of endeavor, Roh teaches staggering the pictures according the to average power and cell loss ratio (CLR), which can be a maximum number of frames, on average (Roh: pg. 921, left col., lines 1-10) for the benefit of an efficient starting time of VBR MPEG videos (Roh: pg. 921, left col., lines 8-9). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that an optimum staggering order of said specified frame type is obtained by maintaining a distance between frames of said specified frame type at a maximum on average, in consideration of the number of said plurality of channels in the Krunz invention, as shown in Roh, for the benefit of an efficient starting time of VBR MPEG videos. The Krunz invention, now incorporating the Roh invention, has all the limitations of claim 18.

Re. **claim 19**, the claim(s) recites analogous limitations to claim(s) 18 above, and is/are therefore rejected on the same premise.

7. Claims **20-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Krunz, in view of Kaul et al. (U.S. Pat. 4,002,845; hereinafter Kaul).

Re. **claim 20**, Krunz does not explicitly teach that said causing means comprises a frame rate counter, a plurality of phase registers, and a plurality of comparators, wherein the frame rate counter has an output connected in signal communication with a first input of each of the plurality of comparators, and each of the plurality of phrase registers has a respective output that is connected in signal communication with a second input of a respective one of the plurality of comparators. However, Krunz does teach counting the frame and bit rates (Krunz: pg. 347, lines 1-5), which would suggest a frame rate counter, and having phase slots (Krunz: pg. 350, section 4.1, lines 1-17), which would suggest a plurality of phase registers. Furthermore, in the same field of endeavor, Kaul teaches means to compare (Kaul: Abstract) for the benefit of detecting a loss of synchronization (Kaul: Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that said causing means comprises a frame rate counter, a plurality of phase registers, and a plurality of comparators, wherein the frame rate counter has an output connected in signal communication with a first input of each of the plurality of comparators, and each of the plurality of phrase registers has a respective output that is connected in signal communication with a second input of a respective one of the plurality of comparators in the Krunz invention, as shown in Krunz and Kaul, for the benefit of detecting a loss of synchronization. The Krunz invention, now incorporating the Kaul invention, has all the limitations of claim 20.

Re. **claim 21**, Krunz, now incorporating Kaul, teaches that the video segments are operated on by corresponding ones of channel video encoders, and the frame rate counter synchronizes reset signals associated with the channel video encoders (Kaul: col. 2, lines 37-40).

Re. **claim 22**, Krunz, now incorporating Kaul, teaches that ones of the plurality of registers are loaded with frame offset values corresponding to a selected frame stagger for an associated one of the plurality of channels (Krunz: pg. 350, section 4.1, lines 1-5: a frame delay to cause a stagger).

Re. **claim 23**, Krunz, now incorporating Kaul, teaches that ones of the plurality of comparators are functionally associated with ones of the channel video encoders, the plurality of comparators being operative to provide a timing signal as an output corresponding to the selected frame stagger for the associated one of the plurality of channels (Kaul: Fig. 3: i.e., there are clocks which provide timing signals).

Re. **claim 24**, Krunz, now incorporating Kaul, teaches a plurality of gates adapted to receive as inputs an encoder reset signal level and an output of ones of the plurality of comparators and to provide as an output a reset signal for an associated one of the channel video encoders, wherein respective ones of the channel video encoders are reset at respective timing points corresponding to the selected frame stagger for a respective one of the plurality of channels (Kaul: Fig. 3: a plurality of gates are provided to receive signals).

### **Claim Rejections - 35 USC § 102**

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims **5-15** are rejected under 35 U.S.C. 102(b) as being anticipated by Krunz et al.



Re. **claim 5**, Krunz teaches that in a video transmission system in which video segments are encoded into a plurality of frame types, a method for arranging frame transmission alignment among a plurality of channels concurrently transmitted via a common transmission medium, comprising: identifying a specified frame type in each of said plurality of channels (Krunz: pg. 348, right col., lines 12-13); and causing ones of said specified frame type to be arranged so as to avoid temporal alignment with other ones of said specified frame type in corresponding other ones of said plurality of channels (Krunz: pg. 350, left col., section 4.1, lines 3-5).

Re. **claim 6**, Krunz teaches that said ones of said specified frame type and other ones of said specified frame type are temporally displaced, relative to one another (Krunz: pg. 350, left col., section 4.1, lines 3-5).

Re. **claim 7**, Krunz teaches that said specified frame type in successive ones of said plurality of channels are displaced by one frame position relative to a location of said frame type in a preceding channel (Krunz: pg. 350, left col., section 4.1, lines 3-5).

Re. **claim 9**, Krunz teaches that each of said plurality of channels is synchronized to a common frame rate and phase (Krunz: pg. 350, left col., section 4.2, lines 11-12 & 15-19).

Re. **claim 10**, Krunz teaches that said plurality of frame types include a high priority frame type and a low priority frame type (Krunz: pg. 348, right col., section 2, lines 3-5).

Re. **claim 11**, Krunz teaches that said plurality of frame types include at least one intermediate priority frame type (Krunz: pg. 348, right col., section 2, lines 3-5).

Re. **claim 12**, Krunz teaches that said video segments are encoded using an MPEG coding methodology and further wherein said high, intermediate and low priority frame types

correspond respectively to MPEG Intra-coded, Predictive, and Bi-directionally Predictive frames (Krunz: pg. 348, right col., section 2, lines 3-5).

Re. **claim 13**, Krunz teaches that ones of said low priority frame type are optionally dropped to reduce required transmission bandwidth (Krunz: pg. 347, right col., lines 9-13 & 21-34: i.e., bit-rate allocation would cause a dropping of frames, including low priority frames).

Re. **claim 14**, Krunz teaches that said video segments are encoded using an MPEG coding methodology and correspond to an MPEG Group of Pictures (Krunz: pg. 348, right col., section 2, lines 3-5 & 11-13).

Re. **claim 15**, the claim(s) recites analogous limitations to claim(s) 1 above, and is/are therefore rejected on the same premise.

#### **(10) Response to Argument**

10. The Appellant(s) present(s) five (5) substantive argument(s) contending the Examiner's rejection(s) of claim(s) 16, 17 under 35 U.S.C. 102(b) as being anticipated by Krunz, as was set forth in the Office Action of 11/10/09, and claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krunz, in view of Kaul. However, after carefully reviewing the argument(s) presented and further scrutiny of the applied reference(s), the Examiner must respectfully disagree and maintain the grounds of rejections for the reasons that follow.

#### **A. Introduction**

The Appellant summarizes and points out the novel features of the instant invention. Claims 16, 17, and 20-23 are appealed.

**B. Whether Claims 16 and 17, From Among Rejected Claims 5-7 and 9-17, are Anticipated Under 35 U.S.C. §102(b) With Respect To Krunz et al., "Impact of video scheduling on bandwidth allocation for multiplexed MPEG streams"**

The Appellant states the Abstract of Krunz and that the limitations of claims 16 and 17 are not shown in Krunz.

**B1. Claims 16 and 17**

The Appellant argues that the applied reference does not teach "...wherein said fixed number of frame positions equal to the number of said plurality of channels, such that the integer multiple is equal to one..." (Appeal Brief of 12/21/09: pg. 16, lines 6-9). Furthermore, the Appellant also argues the preamble of claims 5 and 15 (Appeal Brief of 12/21/09: pg. 16, lines 10-14).

In response to applicant's arguments, the recitation "...video segments are encoded into a plurality of frame types..." has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). However, even if it does hold weight, the Examiner respectfully disagrees that it is not taught for the reasons that follow.

The Appellant summarizes the citation in Krunz and states that Krunz actually teaches away from the limitations of claims 16 and 17 because Krunz only teaches generating I-frames (Appeal Brief of 12/21/09: pg. 16, line 15 – pg. 17, line 2). The Examiner respectfully disagrees. Fig. 3 of Krunz shows a plurality of channels, in this case 2. Furthermore, Krunz discloses a fixed delay of frames, suggesting fixed number of frame positions (Krunz: pg. 350, sect. 4.1, lines 3-5). Lastly, Krunz teaches a number of I-frames and the number of frames between each I-frame being equal to one (Krunz: pg. 348, lines 34-43). This would be the case where only I-frames are produced because that is all that can be made; i.e., it is an example where L and Q can be equal to one, as it says, "...notice that it is possible to have  $L=Q=1$ , in which case only I-frames are generated..." (Krunz: pg. 348, lines 42-43). This example does not limit Krunz to only producing I-frames, as there is also discussion that Q is "...the number of frames between the I-frames and the subsequent I/P-frames..." (Krunz: pg. 348, lines 37-39).

**C. Whether Claims 20-23, From Among Rejected Claims 20-24, are Unpatentable Under 35 U.S.C. §103(a) With Respect to Krunz et al., "Impact of video scheduling on bandwidth allocation for multiplexed MPEG streams" in view of Roh et al., "Starting Time Selection and Scheduling Methods for Minimum Cell Loss Ratio of Superposed VBR MPEG Video Traffic"**

It is firstly noted that claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krunz, in view of Kaul, not rejected under 35 U.S.C. 103(a) as being unpatentable over Krunz, in view of Roh, as stated on pg. 18, lines 14-18, and is suspected to merely be a typographical error.

The Appellant states the Abstracts of Krunz and Roh and that the limitations of claims 20-23 are not shown in Krunz and Roh (although thought to be Krunz and Kaul).

#### **C1. Claim 20**

The Appellant argues that the "...means for causing..." of claim 20 is not for detecting a loss of synchronization but rather for causing a particular frame type temporal arrangement (Appeal Brief of 12/21/09: pg. 21, line 18 - pg. 22, line 5). In response to applicant's argument that the "means for causing " is not for detecting a loss of synchronization, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). That is, because Krunz discusses multiple channels, further elaborated in sect. 4.1, first para., with regards to slots/phases for frame periods, and Kaul discusses means to compare to preventing the loss in synchronization of the frames, which, in the combination of Krunz and Kaul, would "...avoid temporal alignment with others of said specified frame type..." as recited in claim 15.

Furthermore, the reasoning used by the Appellant to combine Krunz and Kaul, is based upon impermissible hindsight. That is, if one were to use the reasoning presented in the arguments, the Appellant has used impermissible hindsight to combine Krunz and Kaul. The Examiner has presented, however, a different reasoning, which which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure.

It is noted that in claim 20, the “means for causing,” is implied up from claim 15 and that claim 20 discusses a frame rate counter, phase registers, and comparators.

## **C2. Claim 21**

The Appellant argues that there is no teaching “...wherein the video segments are operated on by corresponding ones of channel video encoders, and the frame rate counter synchronizes reset signals associated with the channel video encoders...” of claim 21 (Appeal Brief of 12/21/09: pg. 23, lines 3-5). That is, the counter in Kaul is used to monitor the condition of a register and not to synchronize reset signals (Appeal Brief of 12/21/09: pg. 24, lines 1-3). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). That is, Krunk in combination with Kaul would result in the intended limitation of claim 21. Krunk discusses the synchronization of frames, which would reset the signals of the counter provided in Kaul, for the signals in each channel of the video encoders. Furthermore, there is discussion of the counter being reset after producing framing pulses at a frame rate (Kaul: col. 2, lines 37-49).

## **C3. Claim 22**

The Appellant argues that there is no teaching “...wherein ones of the plurality of register are loaded with frame offset values corresponding to a selected frame stagger for an associated one of the plurality of channels...” (Appeal Brief of 12/21/09: pg. 25, lines 1-3) and that Krunk

"...does not teach or even remotely suggest that such delay involves a plurality of registers..." (Appeal Brief of 12/21/09: pg. 25, lines 10-13). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). That is, Krunz in combination with Kaul, teaches a frame delay to cause stagger, as previously cited in Krunz, and Figs. 1 and 3 of Kaul show registers that contain the count of frames to establish offset values.

#### **C4. Claim 23**

The Appellant argues that there is no teaching "...wherein ones of the plurality of comparators are functionally associated with ones of the channel video encoders, the plurality of comparators being operative to provide a timing signal as an output corresponding to the selected frame stagger for the associated one of the plurality of channels..." (Appeal Brief of 12/21/09: pg. 26, lines 13-16). That is, the clocks shown in Kaul do not teach or suggest the intended limitation of the instant claim. Moreover, Kaul does not teach "...even on occurrence of the word 'encode' or the word 'encoder' and cannot show the limitation of claim 23..." (Appeal Brief of 12/21/09: pg. 27, lines 1-3). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). That is, Krunz, in combination with Kaul, teaches encoding and the frame rate clock of Kaul

would, in hand, be associated with each channel of video encoders, which are established in Krunz.

Accordingly, the Examiner must maintain the applicability of the references applied and the rejection previously presented and recited above.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

**Conclusion**

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Geepy Pe/

Examiner, Art Unit 2483

March 21, 2011

Conferees:

/Joseph G Ustaris/

Supervisory Patent Examiner, Art Unit 2483



Andy. S Rao

/Andy S. Rao/

Primary Examiner, Art Unit 2486

March 23, 2011